

REMARKS

Reconsideration of this application, as amended, is requested.

Claims 1, 2, 9, 13, 14 and 32-37 remain in the application. Claims 3-8, 10-12, 15-18 and 20-31 were canceled earlier in the prosecution. Claims 36 and 37 have been added. Claim 19 is canceled with this amendment. Claim 1 has been amended to incorporate the limitations that had been in claim 19. Claim 33 has been amended to address a formal objection raised in the Office Action and claim 24 has been amended into independent form.

The Examiner objected to FIG. 1 and required the designation "FCU" to be change to --ECU--.

A replacement sheet for FIG. 1 is attached.

The Examiner objected to claim 33 and suggested that the abbreviation "ECU" be changed to --electronic control unit--.

Claim 33 has been amended in accordance with the Examiner's request.

Claim 34 was rejected under 35 USC 112, second paragraph. The Examiner concluded that claim 34 did not clearly recite an additional structural limitation.

Claim 34 has been rewritten as an independent claim. It is believed that amended claim 34 overcomes the rejection under 35 USC 112, second paragraph.

Claims 1, 2, 9, 13, 14, 32, 34 and 35 were rejected under 35 USC 102(b) as being anticipated by Yamashita et al. (EP0 614 866).

As noted above, claim 1 has been amended to incorporate the limitations of claim 19. Claim 19 was not subject to an anticipation rejection based on Yamashita et al.

Claim 19 was rejected under 35 USC 103(a) as being obvious over Yamashita et al. considered in view of Paladino (US2,703,304) and Roecknel et al. (EP0 027 911). The Examiner identified the elements in these references that were considered to correspond to limitations presented in original claim 1 and original claim 19.

As noted above, claim 1 has been amended to incorporate the limitations of claim 19. As a result, it is assumed that the Examiner would consider rejecting amended claim 1 under 35 USC 103(a) based on the hypothetical combination of Yamashita et al., Paladino and Roecknel et al.

The invention defined by amended claim 1 relates to an apparatus for use in conducting chemical or biological reactions. The apparatus has a reaction chamber with an inlet for the supply of the at least one reactant and an outlet for the recovery of at least one product. The reaction chamber has “a regulator comprising a propeller mounted in the reaction chamber in the region of the inlet for dispersing the at least one reactant in the reaction chamber.” Amended claim 1 further defines the propeller as having “a longitudinal shaft defining a rotation axis and at least one blade attached to the shaft by means of an elongated blade root.” The propeller is “tilted at an angle up from between 0.5° to 60° with respect to the longitudinal axis of the reactor.” Thus, the propeller is in close proximity to the inlet and the positioning of the propeller in accordance with the claimed angle of tilt promotes superior mixing of the reagent/reactant. The tilted orientation of the propeller and its positioning in the region of the inlet promotes swirling and a turbulent mixing of the incoming reagent/reaction, which in turn can lead to improved yield and/or rates of reaction.

The Examiner acknowledges that the Yamashita et al. reference does not suggest a propeller being tilted at an angle as recited in amended claim 1. It is believed that Yamashita et al. reference has other deficiencies as well. In particular, the Yamashita et al. reference teaches that there is no required relationship between the axis of the propeller and the center of the reactor. The Yamashita et al. reference also does not teach that the propeller is mounted in the reaction chamber in the region of the inlet.

Paladino is not believed to overcome the above-described deficiencies of Yamashita et al. In this regard, Paladino does not teach “a propeller mounted in the reaction chamber in the region of the inlet for dispersing the at least one reactant in the reactant chamber.” The Roecknel et al. reference also does not teach “a propeller mounted in the reaction chamber in the region of the inlet for dispersing the at least one reactant in the reaction chamber.” Accordingly, it is submitted that the hypothetical combination of Yamashita et al., Paladino and Roecknel et al. does not suggest the invention defined by amended claim 1.

Claim 33 was rejected under 35 USC 103(a) as being obvious over Yamashita et al. in view of Mineo et al. (US5,660,467). The Examiner acknowledged that the Yamashita et al. reference did not disclose an electronic control unit associated with the apparatus for controlling the degree of heating or speed. Mineo et al. was considered to overcome this admitted deficiency.

It is believed that the Examiner would have to combine Yamashita et al. and Mineo et al. with the above-referenced Paladino and Roecknel et al. references. The deficiencies of Yamashita et al., Paladino and Roecknel et al. when applied to amended

claim 1 were considered above. Mineo et al. does not overcome those deficiencies. Accordingly, it is submitted that claim 33 is directed to patentable subject matter.

The claims were rejected on the grounds on nonstatutory obviousness-type double patenting in view of claims 1-8 in U.S. Patent No. 7,751,752, claims 1-13 of U.S. Patent No. 7,408,948 and claims 1-7 of U.S. Patent No. 7,171,959. Additionally, the Examiner provisionally rejected claims 1, 2, 9, 13 and 34 in view of claims 1-26 of co-pending Appl. No. 12/084,833. The Examiner noted that timely filed terminal disclaimers can be use to overcome actual or provisional double patenting rejections.

Terminal disclaimers are submitted concurrently with this amendment to overcome the double patenting rejections.

In view of the preceding amendments and remarks, it is submitted that all of the claims remaining in the application are directed to patentable subject matter, and allowance is solicited. The Examiner is urged to contact applicant's attorney at the number below to expedite the prosecution of this application.

Respectfully submitted,



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